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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,753

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Jorgen Lundberg

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EXAMINER

HUG, ERIC J

ART UNIT

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1791

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,753	Applicant(s) LUNDBERG ET AL.	
	Examiner Eric Hug	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006 and 03 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/12/2006, 10/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102 and 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 15, 18, 20-22, 25, 26, and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Radvan et al (US 3,937,273).

Radvan discloses a headbox of a papermaking machine for delivering fibrous stock to a foraminous wire. Headbox 10 is provided with a supply conduit 2 and slice 1 having a passage 4 shaped with an increasing depth towards its outlet 3. The taper of the outlet modifies the flow rate of stock onto the wire. Wherein a foamed stock is used, the outlet 3 also allows for an increase in stock volume. See Figure 1; column 2, lines 66-68; column 4, lines 6-20, 31-44.

Claims 15 and 22: Regarding independent claim 22, Radvan discloses a distributor (headbox) for the propagation of a flowing medium (fibrous stock) including a supply conduit (2), at least one distribution gap (slice) having two frictional surfaces (those which define the gap) and a first depth, diverging to an outlet (3) having a second depth which is greater than the

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first depth, and a passage (4) in between having edges extending transversely to the direction of flow (at a point where the channel depth diverges and at two points where the flow is redirected 90°, see Figure 1). It is deemed that the headbox is shaped so that the propagation of the fibrous stock as it flows therethrough is substantially even and parallel along the outlet gap, or it would be obvious to one skilled in the art to provide a headbox that provides for this propagation in order to deliver transversely uniform stock to the wire of the papermaking machine. Regarding independent claim 15, the headbox of Radvan as described above effectively accomplishes the claimed method.

Claims 18 and 25: Example 1 discloses an outlet depth of 10 mm, which is two times that of the inlet depth of 5 mm.

Claims 20 and 26: The outlet of the slice has a rectangular cross-sectional shape.

Claims 21 and 28: There are two 90° bends for redirecting flow.

2. Claims 15, 16, 18, 20-23, 25, 26, and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reiner (US 4,021,296).

Reiner discloses a distributor for delivering a fibrous suspension to a paper machine wherein the distributor comprises a channel made up of varying channel height and/or bends. The varying channel heights and bends produce turbulence for the disintegration of fiber flocks in the suspension. Figure 4 shows a channel cross-section as having a channel height H1 with bends, followed by a decreased channel height H2, and followed by an increased channel height

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H4 which transforms into outlet 1. Figures 7 and 8 also show in cross section an outlet which is preceded by a channel with increasing height.

Claims 15 and 22: Regarding independent claim 22, Reiner discloses a distributor for the propagation of a flowing medium (fibrous suspension) including a supply conduit (7), at least one distribution gap having two frictional surfaces (those which define the gap) and a first depth (H2), diverging to an outlet (1) having a second depth (H4) which is greater than the first depth, and a passage (14) in between having edges extending transversely to the direction of flow (at the location designated by L3, see Figure 4). It is deemed that the distributor is shaped so that the propagation of the fibrous stock as it flows therethrough is substantially even and parallel along the outlet gap, or it would be obvious to one skilled in the art to provide a headbox that provides for this propagation in order to deliver transversely uniform stock to the wire of the papermaking machine. Regarding independent claim 15, the distributor of Reiner as described above effectively accomplishes the claimed method.

Claims 16 and 23: As illustrated in Figure 4, the gap has a plurality of gaps of different depth.

Claims 18 and 25: Column 6 discloses exemplary gap depths. The depth H4 of 4 mm is twice the depth H2 of 2 mm.

Claims 20 and 26: The outlet has a rectangular cross-sectional shape.

Claims 21 and 28: There are several bends for redirecting flow.

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3. Claims 15, 16, 18, 20, 22, 23, 25, and 26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bubik et al (US 4,280,870).

Bubik discloses a headbox for a papermaking machine comprising a guide channel for the stock suspension having at least two step-like widened portions. The step-like widened portions serve for the formation of micro-turbulence in the stock suspension, producing a uniform distribution of the fibers within the suspension. As seen in Figures 2 and 3, guide channel 5 is provided with an upper side surface having two step-shaped widened portions 17 located opposite lower planar side surface 18. The first step-shaped widened portion 17 has a height H. The second step-shaped widened portion 17, downstream of the first step-shaped widened portion, has a height H' which is greater than the first height H. Also, the pulp feed channel 6 (outlet of guide channel 5) is equipped with step-shaped widened portions, 31, 32, and 34, for maintaining the micro-turbulence of the flow of the stock suspension.

Claims 15 and 22: Regarding independent claim 22, Bubik discloses a distributor (headbox) for the propagation of a flowing medium (stock) including a supply conduit (3), at least one distribution gap (guide channel 5) having two frictional surfaces (18, 30, those which define the gap) and a first depth S, diverging to second depth H which is greater than depth S, then diverging to an outlet 6 having a third depth H' which is greater than the first depth S and second depth H, and a passage in between having edges extending transversely to the direction of flow (at points 17, see Figure 2). It is deemed that the headbox is shaped so that the propagation of the fibrous stock as it flows therethrough is substantially even and parallel along the outlet gap, or it would be obvious to one skilled in the art to provide a headbox that provides for this

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propagation in order to deliver transversely uniform stock to the wire of the papermaking machine. Regarding independent claim 15, the headbox of Bubik as described above effectively accomplishes the claimed method.

Claims 16 and 23: As illustrated in Figure 2, the channel has a plurality of gaps of different depth.

Claims 18 and 25: From Figure 3, it is deemed that depth H' is at least twice that of depth S.

Claims 20 and 26: The outlet has a rectangular cross-sectional shape.

4. Claims 15-18, 20, and 22-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bubik et al (US 6,372,092).

Bubik discloses a headbox for supplying a material suspension to a paper machine, the headbox including first and second walls arranged to form a path towards an outlet nozzle, in which the cross-sectional height Z steadily decreases in the material flow direction and then continually increases in the material flow direction at the nozzle. This causes a flow deceleration in the end region of the headbox nozzle so that no substantial turbulence arises. The diverging path length is designated as L2, see Figures 1 and 2.

Claims 15 and 22: Regarding independent claim 22, Bubik discloses a distributor (headbox) for the propagation of a flowing medium (material suspension) including a supply conduit (6), at least one distribution gap (path 4) having two frictional surfaces (1, 2, those which define the gap) and having at least a first depth diverging to second depth which is greater than the first depth, and a passage in between having edges extending transversely to the direction of

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flow (at the points of convergence and divergence of the walls). It is deemed that the headbox is shaped so that the propagation of the fibrous stock as it flows therethrough is substantially even and parallel along the outlet gap, or it would be obvious to one skilled in the art to provide a headbox that provides for this propagation in order to deliver transversely uniform stock to the wire of the papermaking machine. Regarding independent claim 15, the headbox of Bubik as described above effectively accomplishes the claimed method.

Claims 16 and 23: As illustrated in the figures, the paths have a plurality of gaps of different depth.

Claims 17 and 24: Column 4, lines 39-45 discloses the smallest and greatest possible cross-sectional heights. These overlap the claimed range for gap depth.

Claims 18 and 25: The disclosed depths make it possible for the outlet depth Z to be 1.2 to 4 times the inlet depth.

Claims 20 and 26: The outlet nozzle has a rectangular cross-sectional shape.

5. Claims 15, 16, 19, 21-23, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fredriksson et al (US 5,571,383) in view of Bubik et al (US 4,280,870).

Fredriksson discloses a distributor for a flowing medium such as a fibrous suspension, wherein the distributor comprises a passage 8 formed by two walls and having a curvilinear shape transverse to the flow direction, a deflection surface 11 for the flowing medium, and an outlet gap for delivering the flowing medium. The distributor is shaped so that the propagation of the flowing medium is substantially even and parallel along the outlet gap. The distributor of Fredriksson differs from that of the claimed invention in that the passage is of constant depth

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rather than having an outlet gap with a second depth greater than a first depth of the passage preceding the outlet.

Bubik discloses a headbox for a papermaking machine comprising a guide channel for the stock suspension having at least two step-like widened portions. The step-like widened portions produce a uniform distribution of the fibers within the suspension. As seen in Figures 2 and 3, guide channel 5 is provided with an upper side surface having two step-shaped widened portions 17 located opposite lower planar side surface 18. The first step-shaped widened portion 17 has a height H. The second step-shaped widened portion 17, downstream of the first step-shaped widened portion, has a height H' which is greater than the first height H. At the time of the invention, it would have been obvious to one skilled in the art to modify the passage in the distributor of Fredriksson to be shaped as that of Bubik to uniformly distribute the suspension as taught by Bubik. Such a modification would yield the present invention.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571)272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/
Primary Examiner, Art Unit 1791